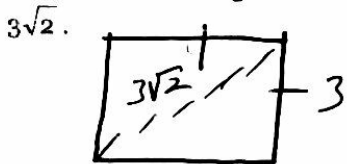


Unit 10 Review - Area

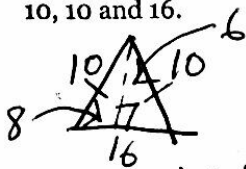
Draw and label a figure that demonstrates the given information. State the area formula for that shape and solve for the area, showing your work.

1. A square with a diagonal of $3\sqrt{2}$.



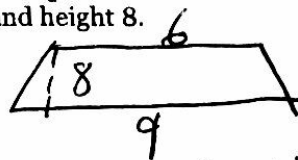
$$A = s^2 = 3^2 = \boxed{9}$$

2. An isosceles triangle with sides 10, 10 and 16.



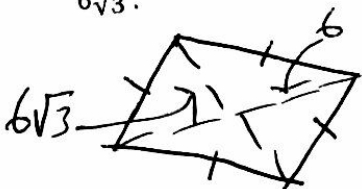
$$A = \frac{1}{2}bh = \frac{1}{2}(16)(6) = \boxed{48}$$

3. A trapezoid with bases 6 and 9 and height 8.



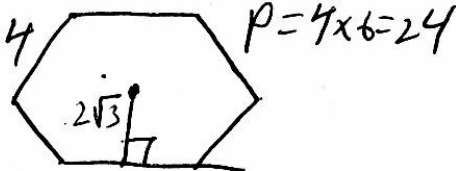
$$A = \frac{1}{2}b(b_1 + b_2) = \frac{1}{2}(8)(6 + 9) = \boxed{60}$$

4. A rhombus with diagonals 6 and $6\sqrt{3}$.



$$A = \frac{1}{2}(6)(6\sqrt{3}) = \boxed{18\sqrt{3}}$$

5. A regular hexagon with side 4 and apothem $2\sqrt{3}$



$$P = 4 \times 6 = 24$$

$$A = \frac{1}{2}ap = \frac{1}{2}(2\sqrt{3})(24) = \boxed{24\sqrt{3}}$$

6. A circle with diameter 12.

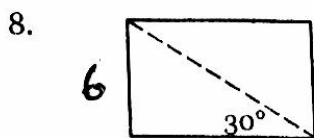


$$A = \frac{1}{2}\pi r^2 = (6)^2\pi = \boxed{36\pi}$$

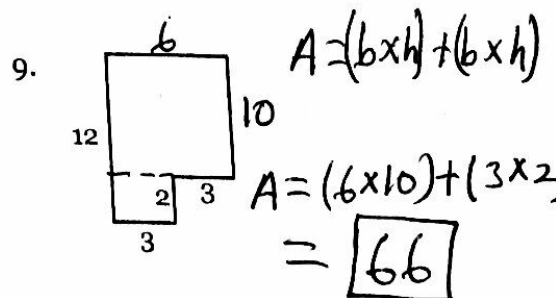
Find the area of each polygon. State the area formula you are using.



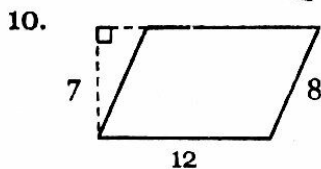
$$A = s^2 = \left(\frac{5\sqrt{2}}{2}\right)^2 = \boxed{\frac{25}{2}}$$



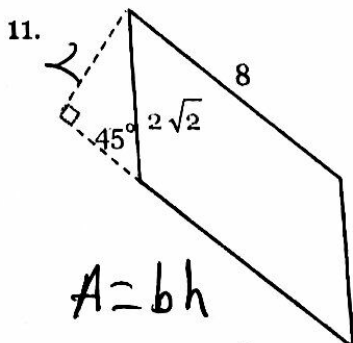
$$A = bh = 6 \cdot 6\sqrt{3} = \boxed{36\sqrt{3}}$$



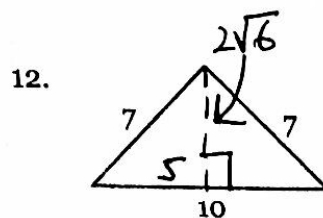
$$A = (b \times h) + (b \times h) = (6 \times 10) + (3 \times 2) = \boxed{66}$$



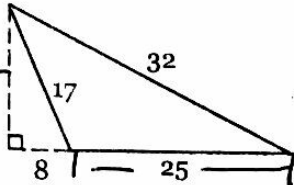
$$A = bh = 12 \cdot 7 = \boxed{84}$$

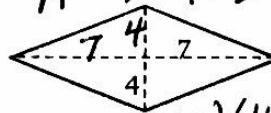


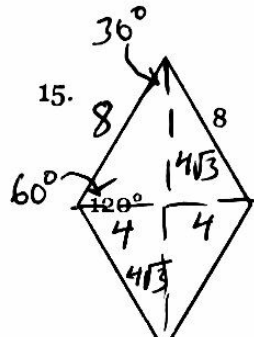
$$A = bh = 2 \cdot 8 = \boxed{16}$$

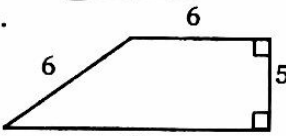


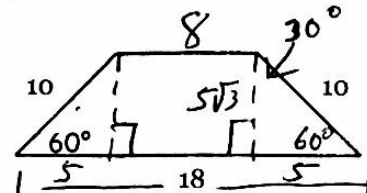
$$A = \frac{1}{2}bh = \frac{1}{2}(10)(2\sqrt{6}) = \boxed{10\sqrt{6}}$$

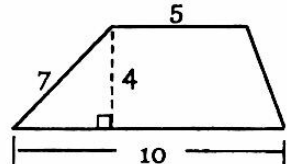
13.  $A = \frac{1}{2}bh$
 $= \frac{1}{2}(25)(15)$
 $A = \frac{375}{2}$

14. $A = \frac{1}{2}d_1d_2$

 $A = \frac{1}{2}(8)(14)$
 $= 56$

15. $A = \frac{1}{2}d_1d_2$
 $= \frac{1}{2}(4)(4\sqrt{3})$
 $= 8\sqrt{3}$


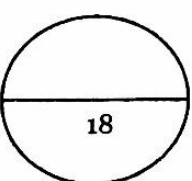
16. 
 $A = \frac{1}{2} \cdot 5(11+6)$
 $= \frac{85}{2}$

17. 
 $A = \frac{1}{2} \cdot 5\sqrt{3}(18+8)$
 $= 65\sqrt{3}$

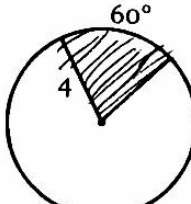
18. 
 $A = \frac{1}{2} \cdot 4(10+5)$
 $= 30$

$A = \frac{1}{2}h(b_1+b_2)$

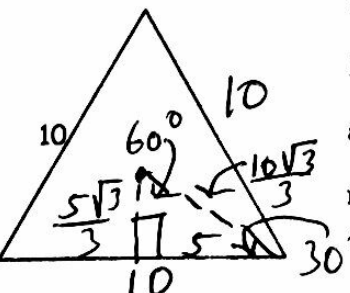
19. Find each missing value.

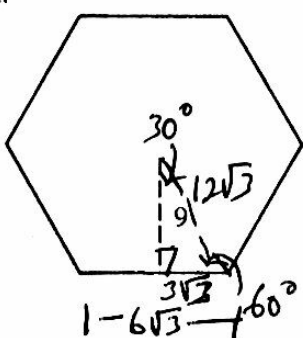
 $r = \frac{9}{}$
 $d = \frac{18}{}$
 $A = \frac{81\pi}{}$ $C = \frac{18\pi}{}$

20. Find the area and arc length of the smaller sector.


 $L = \frac{60}{360} \times 2\pi(4) = \frac{4}{3}\pi$
 $A = \frac{60}{360} \times \pi(4)^2 = \frac{8}{3}\pi$
Area = $\frac{8}{3}\pi$ Length = $\frac{4}{3}\pi$

Find all the values for each regular polygon.

21. 
 $s = \frac{10}{}$
 $P = \frac{30}{}$
 $a = \frac{5\sqrt{3}}{3}$
 $r = \frac{10\sqrt{3}}{3}$
 $A = \frac{25\sqrt{3}}{}$
 $A = \frac{1}{2}(\frac{5\sqrt{3}}{3})(10)$
 $= 25\sqrt{3}$

22. 
 $s = \frac{6\sqrt{3}}{}$
 $P = \frac{36\sqrt{3}}{}$
 $a = \frac{9}{}$
 $r = \frac{12\sqrt{3}}{}$
 $A = \frac{1}{2}(9)(36\sqrt{3})$
 $= 162\sqrt{3}$